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Madras Forges Ahead
— Public Health Schemes

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Public Health is the application of scientific and medical knowledge for the protection and improvement of the health of a group of people. The World Health Organization in its Constitution states that " Health is the fundamental birth-right of every man, woman and child " and in this country, the burden of sickness with its concurrent absence of organized Social Services has proved to be an over-riding consideration.

To-day the activities of the Public Health Department are oriented chiefly towards the promotion of positive health, through the traditional duties of prevention and eradication of communicable diseases, and the provision of a clean and sanitary environment, while concurrent procedures for immunization and health education have to be carried out. Public Health Schemes include the National Schemes for the eradication of diseases like malaria and smallpox, which have considerably reduced mortality and morbidity over the last decade now require a protracted phase of vigilance during the next few years or so.

The programme of protecting children against three chief diseases, viz., whooping cough, diphtheria, and tatanus, which is done through Primary Health Centres will benefit the vulnerable group of the population of the age-group 1 to 6. While School Health Services for supervising the health of the school child is a programme in the offing, the fourth plan lays new emphasis on expanding rural health services and implementation of rural and urban water-supply schemes, with particular reference to the needs of areas affected by cholera, filaria, etc.

The National Malaria Eradication Programme

The Malaria Eradication Programme which commenced during 1959, 15 unit areas out of 32 odd units enter into a state of active watchfulness or vigilance. This period of vigilance which is to be a continuous future programme is the most critical period of all the four stages, during which, malaria in its original form is never to be encountered again. Parts of eight districts, viz., portions of Kanyakumari. Tirunelveli, Ramanathapuram, Madurai, Tiruchirappalli, Thanjavur, South Arcot and Chingleput enter into the maintenance phase this year.

The Madras State was awarded the Rolling Silver Shield for the best all-round performance in implementing the National Malaria Eradication Programme. For effective work under this phase, the programme centres around Primary Health Centres for which a large number of new Primary Health Centres are to be opened in these maintenance areas shortly.

The National Filaria Control Programme

The National Filaria Control Programme has four units stationed at Kumbakonam, Chidambaram, Chingleput and Vellore respectively, each unit covers a population of about 3 lakhs. Besides this, anti-mosquito and anti-larval measures are in operation in 89 municipalities and 49 panchayats in the State with grant-in-aid from State funds.

The National Smallpox Eradication Programme

The National Smallpox Eradication Programme will be completing the active mass vaccination programme throughout the State for the two-year period. The results of the campaign are extremely good, covering more than 80 per cent population in each district. The future programme includes a scheme of mopping up operations and surveillance

of all districts for the next few years; at the end of which it is hoped that smallpox would have been completely controlled or almost eradicated.

B. C. G. Vaccination Programme

Under the State Public Health Schemes, the *B.C.G. Vaccination Programme* for tuberculosis control commenced in 1954, and the success of protecting over 5 millions of the population in this State over a continuous period of only three years was greatly appreciated by the Central Health Ministry and in recognition of which, the Madras State was awarded the Silver Shield, and Certificates of merit.

Yaws Eradication Programme

Yaws is prevalent among the socially and economically backward communities of the Coimbatore district. Among the 2,000 villages that were surveyed in the last 5 years, about 14 lakhs persons were examined and 11,000 found infected. So far 9,000 persons have been treated successfully. Intensive Health Education on the importance of the vital factor of personal hygiene is stressed. Free soap is distributed to all those infected. Surveys are being carried out in the adjoining districts also.

Guineaworm Eradication

The infection of guineaworm has been reduced drastically from 1,600 villages to 459 villages, from 14,000 cases to 8,000 cases only. This fall has been the result of intense systematic and continuous measure. All water-sources in the endemic areas are treated with chemicals and D.D.T. spraying and infected persons are treated for the disease.

Plague Control

Plague which has since ceased to be a problem in this State for the last two decades. Plague endemic areas lie in the districts along the borders of Mysore and Andhra States.

A permanent staff for plague control work is stationed in these areas, and intensive measures are undertaken. Routine flea surveys are carried out to determine the efficiency of the plague control measures. Quarterly Plague Co-ordinating meetings are held with the Health Authorities of the Mysore and Andhra States.

Epidemiological unit and Mobile Epidemic Units

The *Epidemic Unit* at Madras visited the districts in which cases of cholera, small-pox, and recently dengue-like fever and other infectious diseases were reported, investigated into the epidemiological aspects of these diseases, isolated all infected cases and instituted preventive and control measures. The unit also served to collect and examine water samples from the river Cauvery and its branches, as also from the water tanks near the City for the presence of cholera and other intestinal organisms.

Two separate *Mobile Epidemic Units* also function actively in Chingleput and South Arcot districts, while two more are shortly expected to come into operation.

Immunization against Diptheria, whooping Cough and Tetanus

The programme in rural areas for protecting infants and children up to the age of 5 years against diphtheria, whooping cough and tetanus, coverage is done through Primary Health Centres and was started in October 1964. Four thousand children have been protected so far.

Maternity and Child Welfare Services

In rural areas, the Panchayat Union Councils have opened over 2,000 Maternity and Child Welfare Centres at the rate of one Centre for every 10,000 population, up to a maximum of 10, and two-thirds of the total expenditure on the maintenance of these Centres is met by Government as an annual grant-in-aid. Under the "Madras Area Scheme" Government maintains 19 Maternal and Child Health Centres with

four sub-centres each, while the municipalities maintain nearly 400 Maternity Homes and Child Welfare Centres. One-fourth of the recurring expenditure incurred by municipalities in this regard is met by Government as a Grant.

With the full assistance of the Government of India, untrained rural midwives, known as Thayis, are trained for a period of six months in the technique of asceptic midwifery —over 2,000 have been trained. They are paid cash awards and given a free midwifery out-fit.

Family Planning

Family Planning is vitally concerned with Maternity and Child Welfare Services, and the Crash Programme forms a major activity at the Primary Health Centres; one nurse is specifically employed for assisting the doctors in the surgical methods. Since 1963, 122 Primary Health Centres have been approved as surgeries for vasectomy operations. The Medical Officers receive a special allowance of Rs. 50 per mensem, provided they perform a minimum of 50 operations a month. Field workers (i.e., fathers who have undergone vasectomy operations themselves) are permitted to, bring other eligible fathers to these approved surgeries for vasectomy, for which they are paid an honorarium of Rs. 10 each. It is also proposed to conduct Mobile Vasectomy Camps with the help of Medical Officers of Primary Health Centres.

Advice on family planning is given along with free distribution of contraceptives. District Family Planning Officers have been appointed for the effective implementation of the Family Planning Programme in the Panchayats and Panchayat Unions; while Health Educators at District and Block level are to be employed for intensive education.

UNICEF Skim Milk Feeding Scheme

The *Scheme of milk-feeding* for improving the health and nutritional status of mothers, and children up to 14 years benefited 60,000 such attending Maternal and Child Health

Centres; Primary Health Centres; and the Paediatrics wings of State Hospitals. A total quantity of six lakhs of skim milk powder was received as a gift from the UNICEF for this purpose in 1964.

School Health Programme

Under special *School Health Programmes*, 500 schools in rural areas have been targetted for providing sanitary facilities; such as latrine-*cum*-urinal and drinking water-supply;

While " Health Check up " of school children will be done through 12 Primary Health Centres. Each Primary Health Centre Doctor will examine 2,000 school children and the follow up done by a School Health Visitor. Special treatment of the child will be referred to the nearest Taluk and District Headquarters Hospital.

Primary Health Centres and Training Programmes

One hundred and forty-four Primary Health Centres provide integrated Public Health Services and medical care to the people in rural areas. Medical Officers recruited to these Centres, are oriented to these services, through training provided at the " Orientation Training Centre ". One hundred and twenty Primary Health Centres are to be shortly opened.

An additional 25 Sanitary Inspectors have been trained over the existing 250 in 1964–65. while 100 Health Visitors are under training.

Research cum Action Project

Three *Research*-cum-*Action Project Teams* have conducted surveys in villages on sanitation, nutrition, leprosy, etc., for stimulating active response to these service programmes.

Health Education Bureau

Linking up these Research Project Teams is the Health Education Bureau of this Department which utilizes the service programmes for educating the public. Field workers

are trained in the techniques of Health Education. The Bureau has produced posters, film strips, and other Health Education materials, on various Public Health topics both in Tamil and in English; and published quarterly Departmental Journals "The Madras Health Education" in English and "Arogya Margam" in Tamil. Broadcast in the Rural Forum solely for the benefit of rural areas, have been developed on various health subjects.

In Service Training Programmes are organised by this Bureau and a *Field Study Demonstration Unit* exists and organises studies in the fields of Leprosy, Maternal and Child Health, Nutrition, Family Planning, etc.

Food Adulteration

The prevention of sale of adulterated food articles under the Prevention of Food Adulteration Act, is implemented in 277 local bodies of this State besides the Madras Corporation. Last year 25,000 samples of food articles were taken to detect adulteration and Madras State stands second place in the country in respect of the number of samples taken under the Act. The overall percentage of adulterated samples continue to be 25 per cent in the past four years. For a large scale and intensive sampling throughout the State, laboratory facilities for food analysis as well as the machinery for the enforcement of the Act are under consideration, with the appointment of whole-time Food Inspectors and the establishment of zonal offices.

Air and Water Pollution and Disposal of Sewage and Industrial Waste

An *Analysis Unit for Sewage and Industrial Wastes* investigation of Air and Water Pollution and a *Mobile Unit for field investigation of Water Supplies, Sewage and Industrial Wastes and Disposal Problems* will be sanctioned this year. These two units study the conditions under which existing and newly developing industries function, the hazards they create

to health, and the suggested remedies required to set them right. These units are to also suggest methods of effluent disposal of waste in factories, that are to be started in future.

Vital Statistics

For improving and strengthening the registration of Vital Statistics, in rural areas four schemes were started in 1964. The Sample Registration now in force is for improvement for collection of reliable figures of State birth and death rates, required for observing trends in population growth.

Courtesy : A.I.R., Madras.

Leprosy and Deformity

Dr. WM. LENNOX, F.R.C.S.

Due to inevitable delay, this article on " Leprosy and Deformity " could not find a place in the Leprosy Special Number which was brought out previously.

Dr. Wm. Lennox, F.R.C.S., *is now working in the Department of Orthopædics of Christian Medical College and Hospital, Vellore and possess the missionary spirit to lessen the suffering of the leprosy patients.*

—EDITOR.

The world is becoming a healthier place in which to live as one by one the major diseases yield to modern remedies, and preventive measures are applied on a large scale. At present two major deforming diseases are engaging the attention of doctors and Public Health Department (Governments). One Poliomyelitis, has an acute onset followed by wasting of muscles and deformity; the other, Leprosy, cripplies and disfigures insidiously. Neither have the reputation of killing diseases, but both claim thousands of victim each year. Poliomyelitis is caused by a virtue which attacks the central nervous system. Leprosy is caused by a larger germ, a bacillus, which attacks nerve trunks outside the central nervous system. It also attacks the skin, but not the heart, brain. The facts upon which a modern attitude to Leprosy can be based are as follows.

Leprosy is infectious

It is an infectious disease, and its germ is surrounded by a tough waxy capsule. The power of infectivity is low, probably the lowest of all communicable diseases, and certainly much less than that of tuberculosis. Its mode of spread is

not fully understood. Close, prolonged or repeated contact with the skin of leprosy case is thought to be necessary for its transmission. It is not a venereal disease. The commonest route of spread is from mother to child and it may thus appear to run in families although it is not hereditary. The older an individual gets, the less becomes his chances of contracting it, even from close contact. Natural resistance is often very high; at least half the cases occurring in children resolve spontaneously, many never being taken to a doctor.

Two forms in Leprosy

Leprosy takes two main forms : firstly cutaneous leprosy in which the bacilli thrive in the skin and nose; secondly, nerve leprosy in which the bacilli are found in the nerve trunks, usually in smaller numbers. Mixed types also occur, but usually skin or nerve manifestations predominate. Only skin leprosy is infectious, and as this forms only about a quarter of the observed cases, the majority of patients are non-infectious.

Deformity in Leprosy

The deformities resulting from leprosy are of two types. Firstly, " primary " deformity which is due to the disease process itself. Examples of this are dropped foot and clawing of the fingers. Clawing of the fingers occurs because certain small muscles in the hand become paralysed when leprosy damages the nerve which controls them. Dropped foot occurs when the nerve controlling the muscles which lift the foot is attacked, and similarly the nerve and muscles which close the eye may be affected. Because these deformities are the result of the attack of leprosy bacilli they are classified as primary deformities. " Secondary " deformities are due to complications superimposed upon the main disease. For instance, sensory nerves are frequently damaged leading to impairment of feeling in a hand or foot. This is a handicap but not a disaster as long as the patient takes care not to touch

hot things or to suffer injury, and seeks immediate attention when a wound occurs. But if an injury is neglected (because there is no pain), then infection is likely to set in, and loss of a finger or two may result. Nearly all the mutilations of leprosy are the result of complications and are therefore secondary deformities. They are not due to leprosy and do not indicate infectivity. Secondary deformities are never seen in poliomyelitis since significant losses of sensation are not produced by this disease. The common secondary deformities of leprosy are mostly losses of fingers following burns or infected wounds, and loss of toes and feet from ulcers.

The cardinal fact regarding deformities is that most primary deformities can be corrected by surgery, and most secondary deformities prevented by care.

Prevention of Deformity in Leprosy

Leprosy is no longer a disease to be feared, but treatment must be started early if deformity is to be avoided. If a patient commences treatment with DDS before deformity appears, the prospects of avoiding deformity altogether are fairly good. But careful regulation of the dose is essential. Too little will not halt the disease, and too much may aggravate it, and bring about widespread or local paralysis (and deformity).

Unfortunately, in many instances a developing deformity is the first sign noticed by the patient, and in these cases recovery of the deformity is less easy to achieve. If a deformity has only been present for a short time and the corresponding nerve is tender, certain simple conservative measures may enable recovery to take place. The sites at which nerves are attacked are close to joints, and movements of the joint aggravate the inflamed nerve. The nerve can be ' rested ' by immobilising the joint in a padded plaster splint. At the same time the plaster should fix in a neutral position the joint which the paralysed muscles normally move, so protecting them from stretching. The principle of protective splinting

of weakened muscles is not peculiar to Leprosy. It is employed in all orthopaedic condition, including poliomyelitis, in which muscles are temporarily weakened or paralysed. Where a recent Leprosy deformity is accompanied by enlargement and tenderness of the nerves and fever, steroid drugs are valuable aids to treatment; but they must be given only under close medical supervision.

In the field of surgery operations are sometimes carried out on the nerves in an effort to reverse a slowly developing paralysis, and thus to correct a deformity. The operations consist of decompression of the swollen nerves, or transfer of the nerve to a bed of soft muscle. Occasionally these operations are dramatic in their effects, but over all the results are not sufficiently predictable for them to be used routinely at the present time.

Although primary deformity cannot always be avoided, secondary deformity is completely preventable. This fact should be constantly impressed upon the patient, because once it has occurred secondary deformity is only rarely amenable to surgery. The patient is at risk because he does not feel small injuries, which therefore go unnoticed and untreated. In these circumstances, they progress to severe inflammation with destruction of bones, joints tendons and even an extremity. The risks, however, are minimised if certain simple precautions are learnt at the very beginning of treatment and practised throughout life. Here are some examples :—

Mugs or beakers containing hot liquids should not be grasped with the bare hands; they should be held in a special insulated sleeve or by a handle.

Cigarettes should only be smoked in a holder;

Hands and feet should be specially examined several times a day by the patient himself for minor cracks and wounds. These should be dressed immediately.

The skin of anaesthetic extremities should be kept supple and soft by daily massage with a little vegetable oil.

The patient must always wear sandals with soft rubber insoles if the feet are anaesthetic.

We try to persuade patients to make these habits an integral part of their daily living. Those who practice them will never lose a toe or finger.

The Surgical Treatment of established Deformity in Leprosy

The application of orthopaedic techniques similar to the ones used in Poliomyelitis to leprosy deformity has opened up a new era for the leprosy victim and real prospects of resettlement in a job and in society. The effects of operation are frequently remarkable. A mutilated hand can often be made to function better even if its appearance cannot be improved. The operations are within the capability of any competent surgeon with a little special training. The following paragraphs describe a little of what can be done for the various disabilities :—

Hands

Nerve leprosy paralyse the nerves to the hand, causing anaesthesia and paralysis. The overall effect on the hand is as follows :—

Claw finger deformity due to paralysis of the delicate hand muscles; wasting of the normal concurs of the hand.

Inability to move the finger joints in the correct sequence for grasp;

Incorrect grasp with the tips of the fingers ' digging in ' to the object held.

This leads to ulceration and shortening of the finger tips.

Inability to swing the thumb across the palm to face the other fingers. Because of this, the patient cannot pinch or grasp correctly.

These disabilities add up to a substantial handicap; when both hands are involved, the incapacity is formidable. By operation, we seek to restore muscle balance in the fingers

so that clawing is corrected, and the function of grasp restored. For the thumb, we provide a muscle to rotate it across the palm, thus restoring pinch and perfecting grasp. In favourable cases, these objectives can be fulfilled by two operations on the hand. At the first operation, a finger tendon is transferred to the thumb and made to pull it across the palm. At the second, a leg tendon is grafted into a wrist tendon, and then tunnelled down to the fingers. After a period for healing the patient quickly learns to use his transferred muscles in their new locations.

Post-operatively, the appearance and function of the hand can be astonishingly good. In the badly handicapped, even a modest improvement in hand function, can make all the difference between ability to work, and complete dependence on others.

The foot

Leprosy paralyses the nerve to the muscles which raise the foot. This produces important defects in the gait. The leg is lifted abnormally high during the step, and then the foot comes down with a heavy impact along its lateral edge. This predisposes to ulcers. Ulcers are also promoted by paralysis of the small muscles inside the foot and by loss of feeling in the sole of the foot.

By transferring a muscle from the back of the leg on to the top of the foot and by transferring tendons from beneath the toes into their upper surfaces, we can correct the abnormal gait and the factors that predispose to ulcers. By so doing we prevent the severe mutilations which ulcers cause. Severe mutilations can be helped by operations which reshape the bone of the foot.

The face

Leprosy paralyses the nerves to the muscles of facial expression. Their results firstly paralyses of the eye lids and secondly dropping of the corners of the mouth. The dangers

of being unable to close the eyes cannot be over-estimated. Of all paralyses this is the one which calls for the most immediate treatment. Without treatment, blindness will eventually ensue. Surgical correction consists of taking a slip from the temporal chewing muscle and passing it into the paralysed eye lids. After a period for healing, patients become able to close their eyes by clenching the teeth. They must remember to clench their teeth periodically in order to imitate the blink reflex of the normal eye, especially when walking along dusty roads.

Drooping of the mouth can be corrected by transferring a slip from the chewing muscle of the cheek to the corner of the mouth.

Loss of eye-brows results from direct involvement of eye-brow skin by germs, and this is usually corrected by grafting a patch of hair from the temple or from behind the ear. Magnificient bushy eye-brows are obtained; their only draw-back being that they require periodical trimming.

Collapse of the nose is the most disfiguring deformity of all. The cartilagenous support is destroyed, and the nose sinks into the middle of the face, with the nostrils facing cavernously forwards. Reconstruction takes place in two stages. First, a new lining of skin is grafted into the interior of the nose followed later by a bone graft to hold up the bridge This is one of the most dramatic operations of plastic surgery.

A Deformity Service

Rehabilitation of a patient deformed by any cause requires team work.

The deformities of leprosy belong rightly to the realm of orthopaedic surgery, but many general surgeons are willing and able to perform the simpler operations. The surgeon leads the team, and is closely supported by a Physiotherapist, social worker, splint, and shoe-maker, and occupational therapist. Such a team and the facilities which it needs are

naturally expensive, but in many cities and towns there are already hospitals whose staff are starting a rehabilitation service. The complicated cases of course are sent to the specialized centres. The ideal achieved when leprosy case to receive their medical treatment from a leprosy unit, and then undergo operation at a nearby surgical centre. Post-operative treatment is then provided in the general physiotherapy department, after which they are discharged to their homes.

Most of the State is served by leprosy clinics, and most are within reach of hospitals with surgical facilities. With planning, co-ordination and goodwill it has become possible to offer the benefits of corrective surgery and rehabilitation to all, who through deformity, cannot support themselves or their families.

Individual Latrine

versus

Community Latrine

SRI DAMODARA RAO, B.E. M.SC. (P.H.E.),
Assistant Engineer—Public Health, Poonamallee Health Unit.

The Health Unit situated at Poonamallee in Madras State covers 39 square miles and a population of 75,000. Here a hookworm survey was carried out in the year 1935 by Rocke feller Foundation. The survey revealed a high incidence of worms especially hookworm. Rural latrines were thought of as a measure to control this condition.

Both community latrines and individual latrines are now in use in the area. The number of community septic tank latrines is 24. Every year about 200 individual latrines are being installed for the past 20 years

The Community Latrines

The septic tank latrines adopted are according to type design of Sanitary Engineer. These have two seats or four seats and have a dispersion trench to dispose off the effluent from the septic tank.

One of the main difficulties of the septic tank latrines of community type in this area is that the number of users for exceed the designed load. It is not uncommon for a two-seater latrine to have about 70 to 80 users. The users do not know that they have to flush the discharge with sufficient water. This results in the latrine becoming a dry latrine rather than a flushout latrine. In our climate, the deposits harden quickly and when the material is flushed the next day the hardened mass tends to choke up the lead pipes. In public latrines, vandalism is present and inert matter passage. Added to all

this, the habit of the user to take in a small quantity of water just enough for ablution further aggravates the problem. In actual practice, a repaired and recommissioned public septic tank latrine goes out of order in a matter of two or three months. On examination, the pipes leading to septic tank are checked, the pipes in the dispersion trench have solid deposit in them.

One more difficulty of the community septic tank latrine is that the cleaning of the latrine has to be done by a menial and this is a heavy load on any maintaining agency whether it is a panchayat or municipality or any other body. Thus in Health Unit, all the 26 latrines have to be cleaned once every day by the menials and even so any snap inspection will show the latrine in bad light because all through the day, users will be utilizing the latrine. In certain latrines, sludge in the septic tank also accumulates too fast and there is not enough digestion. The lead pipes to septic tank are unable to convey the discharges when flushed out. At this juncture, the material in the septic tank is carted away periodically and thus the septic tank is converted into a cesspool. Such problem septic tanks require more attention than the others. Repairing the septic tanks is also a costly affair because the dispersion trench has to be redone.

After all this trouble, the community latrine is jibed at by every one as a bad example of latrine. This image is difficult to remove and prejudices many a person about the convenience and safety of an individual house latrine.

Hence the concept of community latrine in rural areas must be discouraged except in very exceptional circumstances. It is better to encourage individual house latrines wherever possible.

Individual House Latrines

In Health Unit, a simple model which incorporates the pan, the water seal and the foot rest all in one piece is in use. This is referred to as water seal squatting slab. A

subsidy of two-thirds of the cost of the slab is given by the State Government. So the individual house owner can get the slab for one-third of the price. This works out to approximately Rs. 4 the total cost of the water seal squatting slab being about Rs. 12. When a water seal squatting slab is purchased, the menials from Health Unit go to the house of the buyer, make a bore-hole 14 inches in diameter and about 8 feet deep and install the water seal squatting slab so that the discharges can be flushed into the bore-hole. The house owner has to put in an enclosure and the latrine is ready for use. The villagers prefer to have the latrine as far away from house as possible because they are unable to get over the idea that " a latrine must naturally smell ". A lot of health education has to be done to change their views. With a little care, the latrine of the bore-hole type adopted in Health Unit can be made safe and to have no pollution hazard to water-supply. The adoption of bore-hole in Health Unit was due to the minimum cover required to cover the bore-hole. If a pit or a trench is adopted it costs more to cover the pit or trench.

In problem areas, viz., where water table is high or soil is loose, the adoption of a pit or trench either lined or unlined is the only solution. In actual practice bore-holes made in summer seem to stand better than during other seasons. This is perhaps due to better consolidation of the sides of the bore-hole in summer because the water table is low and the soil is not moist.

The bore-hole 14 inches diameter and 8 feet deep serves between 9 months to 1½ years with an average of about 1 year in a number of cases. After the bore-hole is filled up, the water seal squatting slab is shifted to discharge into another freshly made bore-hole. Thus the water seal squatting slab can be kept in use continuously. Also the connection can be made to a pit or trench instead of bore-hole which is not easy in all areas.

It seems reasonable to assume that a rural latrine must be safe, cheap, easy to maintain and not give rise to objectionable sight or smell

This is possible with the present knowledge. Such a proposition is feasible for individual house latrine only rather than the community latrine. Cost is not a very prominent factor as it might be possible to construct a usable latrine incorporating the above items for about Rs. 50. But the user must know how and why the latrine should be flushed every time it is used either for passing stools or urine and also what to do when the pit fills up. In rural areas, the concept of disease prevention does not win over the people to the idea of using the latrine. The argument of convenience and privacy especially for use of women, children and invalids has a more convincing ring for them. It is this aspect which will have to be exploited if the rural latrines have to be pushed through more intensively.

Knowledge Test on Smallpox

N. K. GOPALAKRISHNAN,
Student, III B.A., Psychology
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These are the impressions and observations of Sri Gopalakrishnan, a student in the Psychology Department of Presidency College, who worked as a volanteer on weeder's Counter displayed in the health pavilion in All-India Khadi, Swadeshi and Industrial Exhibition, Madras.

The State Health Education Bureau, had conducted a simple survey to study the level of knowledge of the people in small-pox who attended the health stalls. The counter was designed and prepared by Sri Natarajan, Social Psychologist of Healh Education Bureau with the assistance of Craftsman of the Bureau. This counter was having a special provision of automatic recording system.

—Editor.

Knowledge is something that comes from various sources. It comes mainly through education. But, everybody cannot enjoy the fruits of education. Of course, there are many, an illiterate who possess genuine knowledge whichever the source of knowledge like medicine, and hygiene, facts about may be, a perfect knowledge in some fields becomes vital. In fields like medicine, and hygiene, facts about certain diseases must be had by everybody so that the people can eliminate the predicaments and barricades that lie in the way of maintaining their health. Nobody is supposed to have erroneous knowledge in such fields, because it plays a detrimental role in the maintenance of health. One of the ways of putting such vital facts to the view of the public is through exhibition.

Mr. Natarajan, the Social Psychologist of the Department of Public Heealth, Madras, divised an apparatus for the collection of public opinion about small-pox and also to give the public a perfect information about it and this was kept in the pavilion of the Department of Public Health, in the Congress Exhibition.

What is small-pox in reality? To put it in a nutshell, small-pox is an airborne disease caused by a virus called **variola.** It can be seen by rashes on the skin (of the patient).

To give a brief description of the apparatus, mentioned earlier, it was a box with a panel show two questions in Tamil. The first question was " How small-pox is caused? " Five alternative answers were given—Small-pox is caused by (1) excess of heat produced in the body, (2) flies and mosquitoes, (3) contact with the patients of small-pox, (4) unhealthy habits, and (5) God's curse. For each answer, there was a switch on one side of the answer, and a bulb on the other side. The subject had to press the switch by the side of the answer, which he thought was right. It had been so arranged that the third answer, which was the right one, made the bulb burn, if the corresponding switch was put on. Till the subject got the right answer, he had to do the test Number of pressings for each answer was recorded by the corresponding impulse counters kept inside the apparatus. The exact origin or the root cause of small-pox was not given because it was considered by the devisers of the apparatus that this secondary reason given in the apparatus was of more practical benefit than the root cause or how the first patient got small-pox.

The second question was " What is the preventive measure for small-pox ? " Five alternative answers were given—(1) offerings to Goddess Mariathal, (2) leading a pious and well disciplined life, (3) small-pox is due to fate and hence cannot be prevented, (4) once in three years, vaccination must be had and (5) keeping ourselves and our surroundings clean. Of course, the 4th one was the right answer.

The answers for the questions are not just a random presentation, but have to do with the cultural background of the people and the wrong notions about small-pox prevalent amongst them. Let us take the first question, viz., " How small-pox is caused? " and analyse each answer a little. The first answer is that because of the excess of heat produced in the body, small-pox is caused. This is a common belief of the people. By the excess heat in the body, one may get some boils. The people seem to confuse between the boils and the rashes on the body of the patient affected by small-pox. The 2nd answer, viz., small-pox is caused by flies and mosquitoes owes its origin to the common belief that most of the diseases are caused by insects and pets. The third one, which is the right answer speaks of the fact that small-pox is a contagious disease. The fourth answer, namely small-pox is due to unhealthy habits, is one of the reasons, how a man gets some minor diseases. The fifth answer that small-pox is due to God's wrath has to do much with the superstitions common among the people. Let us look into this more closely.

Why at all man should have superstitions? Man is a theorising animal and he cannot help doing so. When he does not know a thing, he guesses. Man's nature being so, it is no wonder, he has and rears superstitions. Superstitions are good as far as they teach us how to have faith. But, they should not be allowed to multiply, flourish and hinder the mirth and the well-being of the society. Since man is bestowed with the capacity to rationalise, he finds out many logical causes for a failure or an illness which are very convincing to him. When all the tangible reasons which he brings in fail to convince him, he puts the blame on God, fate, destiny and the like. Having got into such an aura of mystery, where he does not bother much to reason out, he ventures further to find a way out to escape the illness or failure, yet not forgetting to be in tune with the superstition. He thinks " if this disease has come because of the God, why won't offerings to him prevent

it?" He feels that it is correct, is immensely satisfied with it and vehemently believes in it. 'To err is human' and most of our fellowmen do.

Turning our attention to the second question dealing with the prevention, consists similarly of 5 answers as seen already. The first answer namely offerings to Goddess, Mariathal will prevent small-pox has to do with the superstition, about which we saw much in the preceding paragraph. The second answer is that by leading a pious and well disciplined life, small-pox can be prevented. It is generally believed that piety and discipline in one's life will free him from the pestilences. The third answer, viz., small-pox is due to fate reflects the tendency of some of the people to attribute everything to fate, I mean the patrons of fatalism and those who are over religious. The fourth answer, "Once in three years, vaccination must be had" is the right way of preventing small-pox. The fifth answer namely small-pox can be prevented by keeping ourslves and our surroundings clean, is akin to the second answer.

I should say here that I had the previlege of working as a volunteer. I would like to cite my and my colleague's experiences and observations. This was a group test in the sense that only one individual had to do the test while the others should be observing the facts. We, the volunteers, requested the public other than the subject (the one who performs the test) not to give their suggestions. At times, suggestions were given. At such times, we had to handle the situation tactfully by requesting the subject not to listen to the suggestions and be misled and also to do the test all by himself.

Subjectively, taking the questions into consideraton, the second question was answered at the first instance more than the first question. It could be inferred that most of the people knew the importance of taking vaccination. The answer for the first question was apparently vulnerable. Now and then, we had to face the question. How the first patient got small-pox? We convinced those gentlemen by telling them the root cause mentioned above.

Taking sex as the criterion, generally men found out the right answer at the first instance rather than did the women. Women, were sometimes very hesitant to come forward to do the test. I would like to refuse the saying of an author with all my humility that " if equality is to be attained, women have to surrender some of their rights." If I am permitted to modify it, I would like to put it " if equality is to be maintained, women have to shed their hesitation ".

Taking the test as a whole, most of the people were found to believe that small-pox occurs mainly due either to unhealthy habits or to flies and mosquitoes. Secondly stood the reason that it comes due to the excess of heat in the body. However, very few people were found to believe that small-pox is due to God's curse. Coming to the second question dealing with the prophylaxis, the second and the fifth answers namely, " leading a pious and well disciplined life " and " keeping us and our surroundings clean " respectively were passed a greater number of times. The first and the third answers namely, " offerings to Goddess Marriathal " and " Small-pox is due to fate " were pressed only by very few people.

The work was successfully carried out because it gave room for self compression and a feeling of achievement of the subjects, who underwent the test. The test was, indeed educative.

My thanks are due to Director of Public Health, and to Professor Sri C. R. Paramesh of Psychology Department, Presidency College, for having given me this opportunity to me and also to my colegues R. Viswanathan, A. Hydrali, A. Mustafa, Manohar and Mallikarchunan who worked with me in this connection.

Feature Article:

Yaws (Framboesia)

Dr. S. FRANCIS XAVIER,
Special Health Officer, Yaws Eradication Scheme, Coimbatore.

Synonyms

Parangi (Ceylon), Kattu Mariatha, Vara Peekali Punnu (Coimbatore District, South India.)

Definition

Yaws is a contagious and inoculable disease, having a definite incubation period, and is characterised by the appearance of papules, which develop into fungating, encrusted, granulomatous cruptions. It is caused by treponema pertenue.

Geographical Distribution

Yaws is prevalent in the world on either side of the equator, approximately between the Tropic of Cancer and the Tropic of Capricorn. It occurs in West Indies, Ceylon, Pacific Islands, Malaya State and in India. It is prevalent in Assam, Andhra Pradesh, Madhya Pradesh, Orissa and has been found recently to be existent in Coimbatore District (South India).

Epidemiology and Endemiology

Yaws is a highly contagious and inoculable disease. For the infection to take place, simple skin contact alone is not sufficient but there should be a breach like an abrasion or ulcer, in the skin, for the organism to enter. The treponeme is also transferred by flies acting as go-between from an Yaws sore to an ordinary abrasion or ulcer. In some countries like Ceylon, the disease occurs in low lying areas whereas in Assam is is

more common among hill tribes and those living in plains. Yaws is neither hereditary nor congenital. A pregnant woman suffering from Yaws does not give birth to a child suffering from the disease.

Etiology

The Treponema Pertenue discovered by Dr. Castellani in 1905 in the exudate of Yaws lesion. The organism is cork screw shaped and closely resembles Treponema Pallidum, the causative organism of Syphilis, it is found in the lymphatic glands and bone marrow. There is hardly any morphologic difference between the spirochoete of Yaws and that of Syphilis.

Pathology

Unlike as in Syphilis, no visceral changes take place in Yaws.

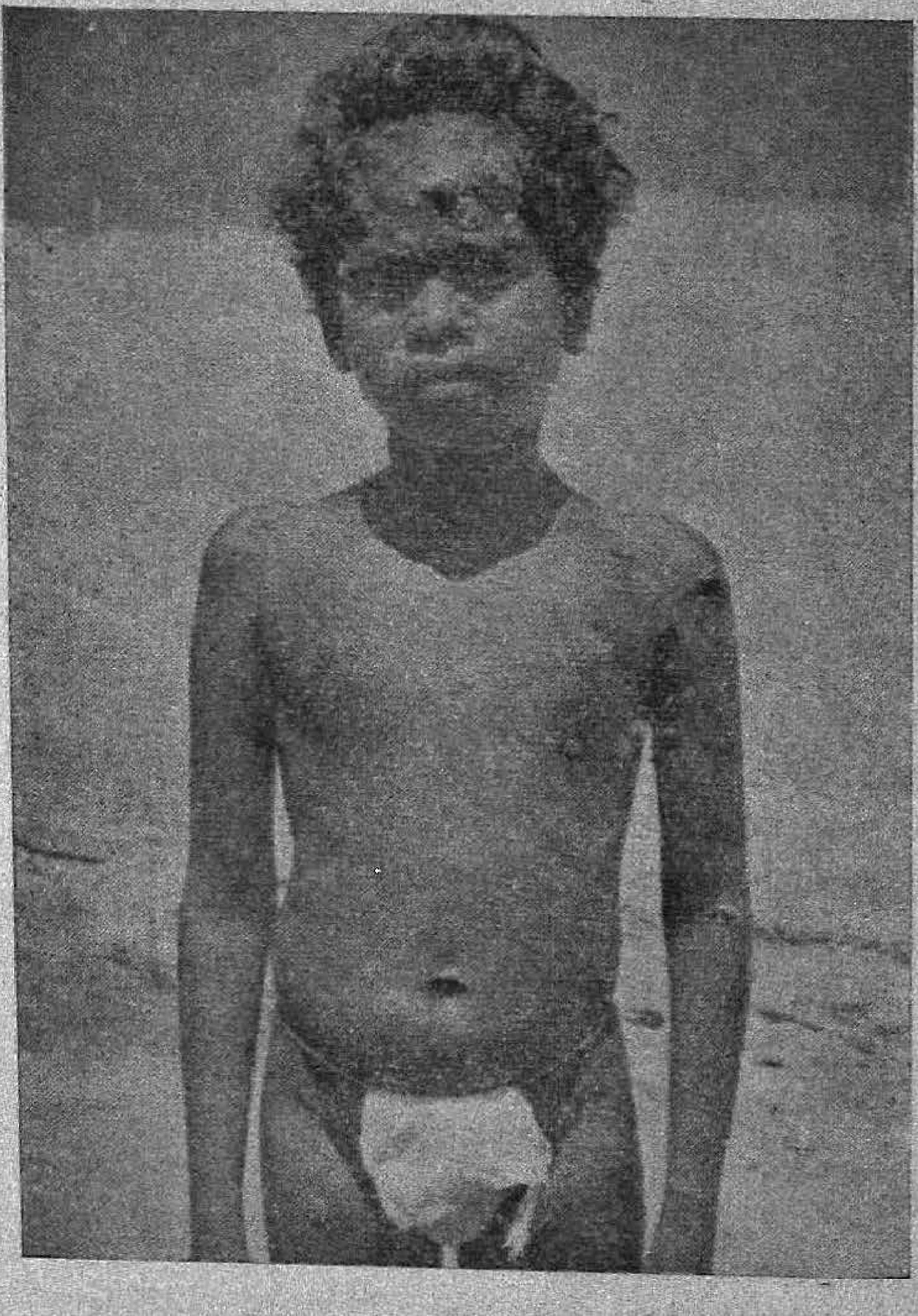
Symptoms and signs

The accepted convention is the classification of Yaws into three stages, viz., Primary, Secondary and Tertiary. It has now been recommended by the World Health Organisation that the categorisation of Yaws into " Primary ", " Secondary " and " Tertiary " stages be modified by the terms " Early " and " Late "; early lesions comprising those previously regarded as " Primary " and " Secondary ", and late lesions, those of the former " Tertiary " stage.

Early Lesion

It has been observed that in an experimentally inoculated case of Yaws, the lesion develops after an incubation period of three and a half to four weeks. Naturally occurring Yaws cases have a longer incubation period than the inoculated disease. The early lesion is a granuloma or a papule at the site of inoculation, 1 to 7 cms. in diameter. It may be found in any part of the body, like the buttock, thigh, knee, leg, arms or breast. The lesions are mostly found in the lower extremity,

due to frequent exposure to injuries. The lesion is generally extragenital. Great difficulty may be experienced in differentiating it from allied cutaneous lesions. It is remarkably persistent from two to four months or a year.



Typical Case of Yaws

This is followed within three years after the initial infection of the patient, by a light coloured furfuraceous scaling. The skin becomes hard and dry and loses its natural gloss. Here and there patches of desquamation are

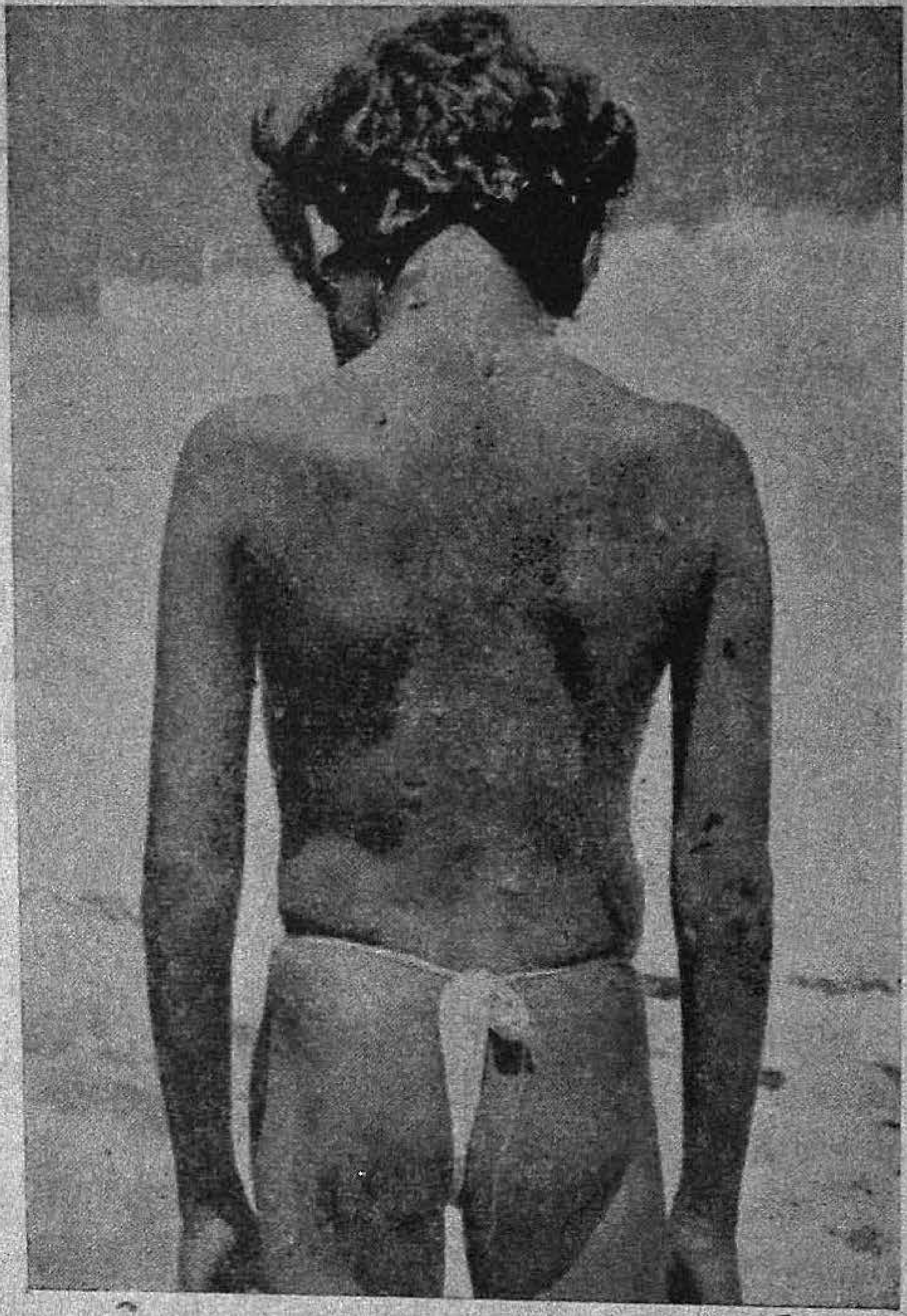
formed. The patches are usually small and circular; occasionally they are scattered over the limbs and trunk. Sometimes they are confluent, the patches coalescing and giving rise to an appearance, as if the entire skin even were dusted with flour. Papillomota are present at the angles of the mouth, axilla, in the anal, cleft and in the inguinal region. Unlike Syphilis they are rarely present on the true mucous surface. They are often grouped in clusters just inside the nostrils. There is painless enlargement of lymph nodes in the aspirated lymph of which Treponema Pertenue may be demonstrated. When the lesions subside, pigmented scars remain and are especially noticeable over the palm of the hand. The serum of the patient gives a marked Wassermann reaction and thus makes the differential diagnosis from Syphilis by that means alone, impossible.

Late Lesions

These comprise those which usually develop three or more years after the induction of the initial infection in the patient. Unless ulceration is present, these lesions are dry. Treponemes are microscopically scanty or are absent in all late lesions. The most characteristic feature of the late lesion is the ulcer. Late Yaws lesion may involve the skin and the subcutaneous tissues, including the skin of the palms and soles, the mucosae, the bones and joints. In all these lesions tissue destruction resulting from ulceration is frequent and characteristic scras or other changes indicating past tissue destruction usually remain.

Lesions of Hand

Scaly condition of palms of the hand may be present in Yaws. Conditions like dactylitis with swelling of phalanges onychia, atrophy and subsequent deformity are often observed.



Typical Case of Yaws

Foot Yaws

It is called crab Yaws, developing on the sole of the foot in the unshod. It is a painful condition and is bound down by dense and thick epidermis causing much suffering. Crab Yaws may last for life time after infection in childhood.

Gangosa

It is a destructive ulcerous-rhino-pharyngitis which is now regarded generally as a sequel of Yaws. It usually commences as an ulcer on the soft palate. Slowly spreading,

it may make a clean sweep of the hard palate, the soft parts, cartilages of the nose, sparing the upper lip as a bridge across a great chasm, the floor of which is formed by the intact tongue. An offensive odour is given from the ulcerated surface. It is a long standing chronic affair and may linger as an indolent ulcer. The progress of the disease can be checked and stopped by treatment with PAM (Procaine Penicillin–G in Oil with 2 per cent aluminium monostearate).

Goundou

It is a late manifestation of Yaws, a destructive lesion characterised by persistent head-ache associated with sanguineous purulent discharge from the nostrils. There are swellings on both sides of the nose. The swellings may enlarge and destroy the eyes, unless removed surgically. Spirochoetes have been demonstrated in sections taken from the swellings.

Non-Destructive Lesions

Juxta articular nodes—They are fibrotic tumours over the olecranon, lower end of the femur and other long bones adjoining joints. They are painless and rarely do ulcerate.

Synovitis

A chronic synovitis analogous to tertiary Syphilis, often associated bone lesions may be present.

Skin Lesions

The heaeling subcutaleous gummata are followed by depigmentation of the skin resulting in leucodermic patches. A macular de-pigmentation of hands, wrists, feet and ankles is pathognomonic of Yaws.

General Health

The general health as a rule is not especially affected.

Immunity

After Subsidence of the early stage, immunity is produced against yaws.

Duration and Occurrence

Yaws lasts for a week, month or years, the duration depending on the general health, idiosyncrasy, hygienic condition and treatment employed. The average duration of Yaws is estimated to be about one year.

Mortality

It has been observed that the mortality due to Yaws is very low.

Advanced Case of Yaws with Deformities

Diagnosis

A painless, large or small encrusted, red, granulomatous, excrescence occurring in an endemic district is almost certainly Yaws. The most important point in connection with Yaws is its relationship with Syphilis. The serum of both the diseases, give a positive Wassermann reaction. In Yaws, the Hutchinson triad-notched teeth, nerve deafness and interstitial keratitisis absent.

Cutaneous Conditions Simulating Yaws

Impetigo Contagiosa, Eczema, Scabies, Tungiasis, Psoriasis, Leprosy, Dermatitis, Ringworm and Pityriasis.

The following table gives at a glance, the main distinctions between Yaws and Syphilis :—

Yaws.—

- Extragenital.
- Scaling present.
- Mucous membrane unaffected.
- Eyes not affected.
- Visceral lesion absent.
- Nervous system not affected.
- Endarteritis absent.
- Constitutional disturbance sligh·

Syphilis—

- Mostly genital.
- Scaling is slight.
- Mucous membrane affected.
- Eyes affected.
- Visceral lesion present.
- Nervous system affected.
- Endarteritis present.
- Attacks constitution, affecting vital Structures.

Treatment

Good food, tonics and occasional aperients to improve general health, are recommended. The drug of choice in the treatment of Yaws is P.A.M. (Procaine Penicillin—G in oil with 2 per cent of Aluminium Monostearate) intramuscularly. Care must be taken for any allergic reaction for which appropriate treatment should be given immediately. The doses are as follows :—

For Active Infectious Yaws—

Adult	... ...	4 cc.
Children	... ...	2 cc.

Contacts :—

Adult	... ...	2 cc.
Children	... ...	1 cc.

For Active Non-Infectious Yaws.

Adult	... ...	4 cc.
Children	... ...	2 cc.

For Inactive Late Yaws :—

Adult	... ...	2 cc.
Children	... ...	1 cc.

NOMENCLATURE AND CLASSIFICATION OF YAWS.

International Nomenclature of Yaws.		*World Health Organisati n Classification of Yaws into nine Groups.*	*Classification of Yaws of patient in mass campaign.*
Early Yaws.	*Late Yaws.*		
(1)	(2)	(3)	(4)
Initial Lesion..	..	1. Initial Yaws	..
Papillomata ..	..	2. Multiple papillomata 3. "Wet Crab" Yaws.	.. Infectious Yaws.
Macules ..	..	..	..
Maculo Papules.	..	..	..
Papules ..	..	4. Other early skin lesions.	..

NOMENCLATURE AND CLASSIFICATION OF YAWS—*cont.*

International Nomenclature of Yaws.		*World Health Organisation Classification of Yaws into nine Groups.*	*Classification of Yaws of patient in mass campaign.*
Early Yaws.	*Late Yaws.*		
(1)	(2)	(3)	(4)
Micro-papules.	..	..	..
Plaques ..	.	..	..
Nodules ..	..	..	..
Hyperkeratotic early Yaws.	Hyperkeratotic Late Yaws.	5. Hyperkeratos's ..	Non-Hyperkeratosis.
	Nodular ..	..	In fectious. Late Yaws.
	Late Yaws ..	..	..
		6. (a) Gummata Ulcers.	..
	Ulcerated ..	..	..
	Nadular ..	(b) Gangosa	..
	Late Yaws ..	..	..
	Plaque ..	..	..
	Late Yaws ..	..	..
Bone and Joint early lesion.	Bone and Joint.	7. Bone and Joint lesion.	..
	Late Yaws ..	..	..
	Juxtaarticular Nodes.	8. Other manifestation.	..
Latent early Yaws.	Latent .. Late Yaws	9. Latent Yaws.	Latent cases and contacts.
Not infected		Not infected.	

(*a*) World Health Organisation Expert Committee on Venereal Infection and Triponematoses 1953. World Health Organisation Technical Report series 63, 33.

(*b*) Hackett. C. J. & Guthe. T. (1956 Ball. World Health Organisation 15–869).

YAWS ERADICATION PROGRAMME IN COIMBATORE DISTRICT.

The following taluks were taken up for Yaws survey and treatment work in Coimbatore district:—

(1) Coimbatore.
(2) Pollachi.
(3) Udamalpet.
(4) Dharapuram.
(5) Sathyamangalam.
(6) Gopichettypalayam.
(7) Perundurai.
(8) Bhavani.

Particulars of Yaws Survey and Treatment work carried out from 1961 to 1964.

Serial number	Particulars.	1961.	1962.	1963.	1964 *Up to August* 1964.	*Total.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Number of villages surveyed	289	581	365	263	1,498
2	Number of hamlets surveyed	949	1,985	1,466	1,360	5,760
3	Population covered (among Harijan)	1,32,911	3,91,364	2,80,864	1,58,169	9,63,308
4	Persons examined (among Harijan)	1,02,933	2,90,578	2,02,975	1,22,121	7,18,607
5	*Survey Work*—					
	(a) Active Infectious	43	101	4	..	148
	(b) Active Non-Infectious—					
	(i) Hyper	936	1,923	1,116	437	4,412
	(ii) Late	570	865	177	54	1,666
	(c) Inactive Late Yaws	545	1,798	1,238	140	3,721
	(d) Total Infected cases	2,094	4,687	2,535	631	9,947
	(i) Male	1,116	2,394	1,298	353	5,161
	(ii) Female	978	2,293	1,237	278	4,786
	(e) Contacts	49	103	14	.	166

6 *Treatment Work*—					
(a) Active Infectious	45	85	13	..	143
(b) Active Non-Infectious—					
(i) Hyper	244	1,506	1,438	481	3,669
(ii) Late	196	800	329	178	1,503
(c) Inactive Late Yaws	182	1,199	1,447	325	3,153
(d) Total treated cases	667	3,500	3,227	984	8,468
(i) Male	346	1,776	1,720	532	4,374
(ii) Females	321	1,814	1,507	452	4,094
(e) Contacts	5	77	48	2	132
7 P.A.M. used (in cc.)	2,415	13,507	10,981	3,497	30,400
8 Remarks.					

Inservice Training Programme in Health Education

For Health Inspectors and Health Visitors

State Health Education Bureau, Madras, is growing ever since its inception. Apart from several health education programmes it is also associated with national programme, like Smallpox Eradication Programme. It organised and conducted Health Education Training for the Smallpox Eradication workers in the districts. These training programmes helped these workers to know how to work with local leaders and how their services could be harnessed to successfully complete the programme in the Community. After having gained a good deal of experience from these incidental training activities it felt that Health Inspectors and Health Visitors of Primary Health Centres should be given training in community work, methods, skills and technique of Health Education so that they would serve the community better by providing comprehensive health services. As a preparatory step to plan the nature of training to be given to the Health Inspectors and Health Visitors the officers of the Health Education Bureau visited several Primary Health Centres to ascertain the normal functions of the Health Inspectors and Health Visitors and to know whether they introduce educational components in their services. The outcome of these visits revealed that the Health Inspector and Health Visitors did some educational part of the services but not in a coherent manner. So the bureau felt that these workers should be given intensive training in community work. Health Education methods and skills and techniques so that they could perform all the seven functions with ease and much more effectively. After a good deal of deliberations at several sittings the whole training

programme took a good shape with three weeks duration theory part for 2 weeks and a field training for one week. It was commenced on February 8 and concluded on 27th February.

The special features of the training

(1) The trainees were taught how to select a village and how to work with the community by following the several steps of the health education process.

(2) How these steps of Health Education process could be utilised to successfully perform the 7 functions laid in the Primary Health Centre Manual.

(3) On working through these steps it was shown how the trainees would become thoroughly conversant with Health skills.

(4) It taught the trainees how to work as a team.

(5) The District Health Officers, Health Educators and Public Health Engineers in the R.C.A. Projects were invited to observe the training with the object that they would realise the significance of Health Education and would give administrative and moral support to trainees when they resumed their work after training.

— 'SHEB

Nutrition Education

Dr. V. RAMAKRISHNA,
Director, Central Health Education Bureau, New Delhi.

With the control of many of the communicable diseases, steady improvement in the health services after independence and the emergence of sulpha drugs and antibiotics, there has been a significant increase in the expectation of life in India from 32 in 1940 to 47 today. It is safe for an infant of today to hope to see its 47th birthday. But there is also the sad picture of people, who due to several factors, particularly those of malnutrition and under-nutrition cannot enjoy a fuller life of vigour and vitality. There is a general inertia and a lowering of physical and mental output. With little or no power of resistance to diseases like tuberculosis, what can one expect but subnormal efficiency in whatever activities they undertake? It is no wonder, therefore, that there has been a large number of rejections in the recruitment to the army during the present national emergency. But it is heartening to know the instances where a slight modification of the daily in-take of certain foods raised the nutritional level of the people resulting in the reduction of sickness and improvement of the working capacity of men.

Nutrition Education is the key

Many people could have balanced and health giving diet within their financial resources and cultural pattern by better selection and preparation of those foods which are already available to them. This could be achieved through well organized nutrition education which is the key to the solution of many problems, related to health and disease. Lack of knowledge of the most simple facts of nutrition is the roof

cause of a high proportion of cases of malnutrition. The inability to select the right kinds of locally available foods and to cook them in such a way that will retain all the nutrients, and inability to develop taste for inexpensive foods which provide nourishment in ample measure, are the main causes for the widespread low standard of nutrition among different sections of the population.

Sporadic Publicity

Some efforts are being made towards education for better nutrition. Most of it is sporadic dissemination of information. A few lectures are given, press and radio are used now and then, pamphlets and popular literature are distributed and posters are struck. Health Visitors, home science workers and others give talks and conduct cooking demonstrations. Field publicity units and mobile health propaganda vans show films on food and nutrition.

Effectiveness of these activities has not been assessed scientifically. It may not be wrong to assume that the people by and large have not yet gained much knowledge or developed favourable attitude or improved their food practices. There may be several reasons for these not having influenced the common man to improve his diet by his own efforts.

Understand why people eat what they eat

It may be important to have the data about calories and nutrient requirements for different categories of people and to know the correct information about the composition of different kinds of food articles. It may also be important to possess the skills to conduct diet or nutrition surveys and pin-point the prevailing pattern of nutritional deficiency. But for planning an effective nutrition education programme, it is vital to find and fully understand the answers to the questions such—why do people eat what they eat? What influences them in selecting only certain kinds of food? Who

makes the decision and in what areas? What values (nutritive and others) are attached to different foodstuffs, and why? What makes them to prepare a dish in a particular way at a particular time or season? Why should they eat only in a certain manner and sequence? Who takes meals first and last at home and why?

Most people are not free to eat what they like to eat and at the time, place and in the company of their choice. They may also not be in a position to have foods combined, prepared and served in the form and the way they want. They are born into the ' food culture ' of the community to which they belong and conform to it as it is safe for them to follow the prevailing pattern.

The illiterate masses, who form 75 per cent of the population, have some notion (which the literate might consider as primitive) about the body, its organs, and their composition and functions, food and its functions, composition and qualities of different foods, the process of digestion and metabolism and the elimination of waste product from the body. Whatever may be his concepts, they are real to him, and have become a part of his personal and community life. The new ideas that are thrust on him, however scientific they may be today, will be rejected if they do not fit into his pattern of concepts, or if he sees no relationship between them. Chances of success of nutrition education programme are remote when its content is contrary to the current views and feelings of the community which is dubbed as superstitious.

Basis of People's Concepts

What could be the basis of the people's concepts, attitudes, beliefs, values, habits and customs? India has the impact of thousands of years of rich cultural and spiritual heritage. The vitality of Indian culture has continued through ages despite many historical vicissitudes because it has its roots deep in the sons of the soil. Without understanding these roots one will never be able to understand what our people are and what they want, and much less one would be able to judge what

they would assimilate and why? Our culture has the characteristics of continuity and common outlook among people. It comes from the past, adjusts itself to the present and moves forward to shape the future. It has been a flowing stream in which attitudes and beliefs about food and diet have got submerged as tributaries. An able nutrition educator should understand this.

Common traditions and norms of conduct have prescribed diet and regimen of life, which if followed by a normal healthy man could result in improved health, happiness and longevity. The system has woven the social, cultural, economic, religious and spiritual components of life into it and made health as the foundation on which the others had to be built. The villagers and perhaps the majority of the urban people are still influenced by these factors, though at times of emergency they may be attracted towards modern medical care. It is no wonder that patients still continue to ask the doctor what they should eat and when, whether they should sleep, eat and when, whether they should sleep after taking medicine, whether they should drink hot or cold water, etc.

Food and Diet in Ancient India

The ancient Indian medicine considers food as the very life of all living creatures, and the body is stated to be the product of the food taken. Its chief function is to nourish the various DHATUS which uphold the integrity of the body. It is interesting to know that it advocated the use of diverse kinds of food for maintaining the growth, strength, complexion, happiness and prolongation of existence of a healthy body. If a normal healthy man wishes to keep up his health, he has to take food in various forms possessing various tastes and attributes so that no one DHATU may come to be in excess or deficit. Food is stated to be converted into RASA and this in turn into blood, flesh, fat, bone, marrow and semen. Food is also stated to act as the fuel to the digestive fire, replenishing it and making it function properly. This food

serves many vital functions of the body and so Charaka and Sushruta gave a very high place for the knowledge of the composition and qualities of various kinds of food and direct that one should never take any food from motives of desire only or in ignorance. The use of beneficial food, to them, was the only cause of growth of a person while the use of injurious food was the cause of disease. This concept of food and diet seems to prevail widely among our rural people. An effective nutrition education should take note and utilize these concepts profitably.

Further, Charaka and Sushruta have done critical study of various kinds of things available as food and discussed in great detail their merits and demerits. They felt that foods were compounds of five elements (BHUTAS)) possessing various qualities (GUNAS) which play an important role in the physiology of digestion and metabolism, the most important quality being taste or RASA. The nutritive power of food is stated to depend on six different RASAS. The six RASAS, separately or in admixture, taken or administered properly and in due measure, nourish the body. Besides these six primary qualities of food, Charaka mentions ten pairs of other GUNAS of food—heavy and light, cold and hot, oily and dry, soft and hard, etc. Great stress is laid on the properties of 'heavy and light'. People attach rightly or wrongly, great importance to these qualities while selecting and using different articles of local foods. Nutrition education workers who dismiss this type of classification as superstitious, will have a hard time in initiating new dietary practices. No amount of dissemination of information about vitamins, minerals and proteins will be able to convince the person and his family to take to a new article of food which they believe will have adverse effect on them.

Daily and Seasonal Regimen of Life

People in different parts of the country have also certain ideas about daily regimen of life.

DINACHARYA—to be followed. One of the important items of DINACHARYA is meals and diet. It gives specific directions regarding the time for meals, articles of diet, sequence of dishes, how to sit at meals, drinking of water at meals, amounts of important food to be eaten, hygiene of the mouth after meals, etc. The dietetic regulations also varied with the season and climatic conditions. These regulations—RITUCHARYA—were divided to be fitted into six seasons. Food articles which possess the qualities of VAYU are minimized or prohibited during cold and rainy season. Similarly salt, sour, pungent, and hot things which produce PITA are avoided during summer and autumn. In winter and spring KAPHA is stated to be aggravated and one is advised to eat fats, milk, preparations and heavy and rich food. Charaka and Sushruta give in great detail the regulations to be followed with regard to food, the department and practices.

Use Ancient Regulations

The above regulations, though in a modified way, still seem to be followed by many communities. For effective nutrition education, a thorough study of these is quite essential to find out the most acceptable articles of food during different seasons. A doctor or nutritionist advising people to take a diet contrary to DINACHARYA or RITUCHARYA will be administering a cultural shock which will lead to the rejection of the advice.

Nutrition education in a traditionally bound society is both complex and difficult especially when ideas and practices of modern nutrition developed in a different culture is to be implanted in a totally different socio-cultural environment. This makes it very interesting as well as challenging. The challenge can be met by strictly adhering to the philosophy and principles of extension education and the worker having implicit faith in them.

Extension Principles

The basic philosophy and principles of extension education are well known to the workers engaged in community development work and hence just a recapitulation of them may suffice :—

(i) Have faith in people and in their inherent capacity to change. Respect human dignity and believe in democratic process;

(ii) Help people to recognize nutrition problems, in finding solution with their own resources, in planning a programme and in assessing progress;

(iii) Know your community : Nutrition needs to be satisfied; where are the people in their knowledge, attitudes, and practices with regard to food and diet; local leadership (lay and indigenous medical practitioners) in nutrition; local resources in terms of availability of food articles, means of production, storage and distribution;

(iv) Plan with people : Interpret modern concepts of nutrition for acceptance; help in seeing the goal clearly; plan step-wise for implementation by the people; co-ordination of different agencies, engaged directly or indirectly with food and nutrition; sustain interest by continuous evaluation and follow up; and

(v) Know your communication process : Local background of the existing process, developing effective local methods and media, to provide information, develop understanding and belief with a view to gain acceptance of new nutrition practices, to provide opportunity for action which result in the desired action and satisfaction.

Opportunities for Nutrition Education

As food is an integral part of the life process, there will be innumerable opportunities for nutrition education. One should be only alive to these situations—see, feel and seize

them. Sensitiveness to these opportunities could be developed in workers by proper training. The worker has also to perceive the various opportunities as an integrated whole beginning from the production to the utilization of food in the most beneficial way. This means a co-ordinated and joint effort of all agencies concerned with food and nutrition.

All the stages of human life present situations and motivations to carry out nutrition education. The young mother, who is pregnant, is in the susceptible mood for initiating new dietary practices. The mother-in-law and the husband who will be looking forward to the coming baby, perhaps will be ready to accept the use of articles of food which were not used by the family before. The entire family will be in receptive mood and well-motivated for an advocated change. Even during the lactation period such an atmosphere may continue wherein the child and mother would get a preferential treatment.

Successful nutrition education could be built in around the growth and development of the infant. The period when the infant is taken to the Balwadi or M.CH Clinic gives another opportunity for either reinforcing or for introducing dietary changes by group acceptance and pressure. The period when a child goes to the school and partakes a school meal, provides another opportunity for nutrition education. Well-organized school lunch programmes have shown to influence not only child's attitudes and practices towards food but also affect the home. School meal programme which includes school gardening and sanitation have proved as potent tools in developing a child into a healthy youth.

Nutrition education can also be woven into urges and aspirations of the youth. Sports and games, physical culture competitions, National Cadet Corps, National Discipline Scheme and Youth Leagues—all these provide a number of opportunities of integrating nutrition education.

The adult going to a factory or an office has special nutritional needs. He uses canteens, cafeteria and restaurants which could influence his taste, likes and dislikes. Carefully thougtout nutrition education could be carried out through these catering organizations.

Hospitals, clinics, sanatoria, dispensaries, etc., will have patients and their families who could be made receptive to advocate dietary practices provided the medical and health personnel employed in them are trained to undertake this useful work.

The community itself could be a centre of nutrition education. The Village Panchayat, Co-operatives, MAHILA MANDALS and Community Leaders can play a vital role in improving the nutrition of the community if they are adequately prepared and supported to undertake this work.

All the extension methods and media could be used in nutrition education. No single method alone will achieve the result. Varying methods and media combined and used in different ways and repeatedly will help the programme to move towards the desired goal. The key to all methods and media is the adequately trained educator who identifies himself with the people, who practices what he preaches, who has immense faith in the methods he uses, who talks in the language of the people and who believes that people can improve their nutritional status with their own efforts. A worker who has developed such an attitude will be an examplar and a guide to the people towards values and goals set by purposeful nutrition education.

Courtesy : " SWASTH HIND ".

In International Co-operation Year

DR. M. G. CANDAU,
Director-General of the World Health Organization.

International Co-operation in health began in the last century under pressure from dread diseases that were causing suffering and death all over the world. It is fitting, therefore, that in International Co-operation Year, 1965. World Health Day should be devoted to one of those diseases—Smallpox.

On this day, I wish to pay tribute to Health Officers the world over constant vigilance limits the spread of smallpox nationally and internationally, and to the health teams who, in all parts of the world, often working in the most difficult conditions, are building up protection against the disease through mass vaccination. Over 160 years ago, vaccination was first shown to prevent the disease; but we have failed to make full use of this weapon. It is outrageous that in one year there should still be 100,000 cases of smallpox and 25,000 deaths from this disease. It is equally outrageous that the world as a whole should still be constantly threatened by it. The World Health Organization in 1958 began a campaign for the eradication of smallpox from the world and I am confident that eradication can and will be achieved. Yet victory will not be attained without generous assistance from the countries free of smallpox, nor without much hard work in the countries where smallpox is still endemic.

The complete eradication of smallpox would not only rid the world of a disease which at present is a constant menace, but would also provide an example of what true international co-operation can achieve in a well-defined and limited sphere. In the meantime, however, a constant alert against smallpox will have to be maintained throughout the world.

"Smallpox—Constant Alert!"

DR. SUSHILA NAYYAR.,
Union Health Minister.

" World Health Day, observed each year on 7th April, marks the anniversary of the coming into force of the Constitution of the World Health Organization in 1948. This year's theme is 'Smallpox—Constant Alert'. Science and medicine are international and we exchange experiences and learn from one another's experiences through the W.H.O. Problems of human health and welfare everywhere are alike and so are the methods of dealing with them.

Considering the heavy toll that smallpox—A perfectly preventible disease—takes every year, its eradication has been taken up in many countries. Hence the theme of W.H.O. day for this year. We have launched national smallpox eradication programme in the current Five-Year Plan and so far nearly 70 per cent of the country's population stands vaccinated. The impact of the work has already shown considerable reduction in the incidence of smallpox in our country but we should not be satisfied with the success so far achieved. We have still to tackle the hard core of the population which continues to suffer from age-old beliefs and superstitions. We have also to ensure that all new-borns are vaccinated and school-going population, immigrants and population residing in slums and suburban areas of big Cities, are re-vaccinated at periodic intervals. Continuous vigilance on the part of all health personnel and integration of vaccination with other public health activities is necessary to ensure freedom from smallpox.

On the occasion of the World Health Day, 1965, I send my good wishes to all the smallpox workers in every corner of the country, who are working with enthusiasm and hope that very soon smallpox will become a thing of the past, to be read about in books and seen in pictures. To ensure that, 'Constant Alert' must be observed everywhere".

Dr. P. S. Naskar,
Deputy Health Minister.

" I am happy to learn that this year the theme chosen for World Health Day is ' Smallpox—Constant Alert '. In our country, National Smallpox Eradication Programme is already on and the work so far done, has shown a good impact. The theme of the World Health Day will definitely provide a tempo to our programme. It will remind people everywhere of the constant threat of smallpox and to spur on the efforts to eradicate this disease.

Smallpox, which has been ravaging our country for centuries, has shown a complete disregard for race, age and sex of the patient and even sanitary surroundings. But now the time has come when smallpox should become a thing of the past, a bad dream, a sad memory and we should be determined that our future generations should be free from the danger of this scourge.

On this occasion, I wish to send my good wishes to all the workers who are fighting against this disease throughout our country, for the cause of humanity. "